



Pomewest
Serving WA Pome Growers





Executive Officer Report



BY NARDIA STACY
EXECUTIVE OFFICER,
POMEWEST

The pome harvest is underway with Galas now being harvested and pears in full swing.

Reports of crops with sound yields with good quality, hampered only by mites in Manjimup and some bird damage in Kirup/Donnybrook, indicate a promising season for our members.

Pomewest continue to work within our 2015–20 strategic plan supporting project activities that provide useful and relevant outcomes for the industry by:

- Fostering a valuable and sustainable industry
- Pursuing excellence in fruit quality
- Providing leadership
- Developing innovation and best practices
- Grower communications

Queensland fruit fly

Good news to report — at the time of writing this article the Department of Agriculture and Food WA (DAFWA) has not detected any new Qfly since November within the Outbreak Zone and Outbreak Area. The baiting program is still expected to conclude on or around 8 March 2016. Provided no further flies or larvae are found, the re-instatement of Qfly Area Freedom for the 15km suspension zone will be sought on or shortly after 8 March 2016.

Identified as a priority for the pome industry, Pomewest has contributed \$28,000 along with other horticulture industries to the DAFWA managed eradication.

Pomewest will continue to update its members as news comes to hand.

ANABP 01

Pioneer growers of ANABP 01 (the dark skinned apple) are expecting a marketable crop with a pick date anticipated in April. This will be the first commercially grown marketable fruit available in Australia — a very exciting development. It will be wonderful achievement to see this new WA variety in store.

HIA workshops

I attended the HIA workshop at the Perth Markets on Thursday 3 February with Paul Good of Newton Orchards to represent Pome in WA. We were given information on the new structure of HIA and we were able to re-establish our relationship.

Working together is the key to secure communications and information for future funding opportunities for projects, and input with marketing plans alongside Apple and Pears Australia Ltd (APAL). This will be beneficial to our local marketing/promotions program for funding and resources. It is important for our members who contribute to the national levies to make sure WA has a piece of the action. If you are interested becoming a member of HIA please follow link <http://horticulture.com.au/membership-application-form/>.

This edition

We present articles on our Maturity Standards for identified WA Apple varieties and netting projects and the lowdown on the recent Future Orchard® walk in Karragullen. We also have a guest contribution from the Fruit West Co-operative Ltd with a story on 'How to be ready for export' which gives orchardist an account of how to be compliant for export opportunities.

I hope that you are finding the subscription to the *WA Grower* magazine beneficial, I welcome any feedback or suggestions for future editions. Along with the Pomewest Committee I wish the State's pome fruit growers all the best during the harvest period and a prosperous season ahead.

Pomewest Committee Members

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APC — Pomewest projects 2015–16 with funding allocation

Project	\$
Commercialisation for WA (FW Co-operative)	\$120,000
Maturity Standards for identified WA Apple varieties (Ashmere Consulting)	\$82,000
Medfly Surveillance Trapping Network (Ashmere Consulting)	\$52,750
Codling Moth (DAFWA)	\$35,000
Markers, Markets and validated nutritional qualities of Australian Apples (UWA)	\$25,000
Natural Mite control Project (shared with the Stone Fruit Subcommittee, Stewart Learmonth DAFWA)	\$18,300
Promotion & Publicity Local Project (Fresh Finesse)	\$16,000
Apple Looper Project (shared with the Wines of Western Australia, Stewart Learmonth DAFWA)	\$4,870

APC Fee for Service — pome fruit effective from 1 January 2015

Type of fruit	\$/kg
Fresh fruit , apples, pears, Nashi, other	\$0.015
Processing fruit	\$0.005
Biosecurity FFS for fresh fruit	\$0.002
Biosecurity FFS for processing fruit	\$0.001



The development of maturity standards



for identified WA apple varieties project



BY KIM JAMES
ASHMERE CONSULTING

Consumer expectations are increasing in regards to eating quality and food safety.

The Western Australian pome fruit industry has been funding quality program work over recent years to deliver improved quality to consumers and to build better business capability and profitability for members.

This Pomewest research program aims to improve and strengthen the quality program and enable the Western Australian pome fruit industry to establish minimum maturity standards for three varieties of apples to commence in 2017.

The Pomewest funded project aims to (i) analyse the first years data from the maturity standards testing of Gala, Granny Smith and Pink Lady™ apples in WA, (ii) to conduct second year confirmatory testing to set minimum industry domestic standards for Royal Gala, Granny Smith and Pink Lady™ apples under the WA *Biosecurity and Management Act 2007 (BAM Act)*, and (iii) to conduct first year benchmark maturity testing of the new yet to be named Western Australian ANABP01 apple.

The expected outcomes from the project are an improved program of development for the maturity standards for three apple varieties, Royal Gala, Granny Smith and Pink Lady™. The maturity data will be used as a basis for proposed legislated maturity standards to be included in the *BAM Act* similar to Western Australia table grapes and citrus standards.

First year data on a benchmark harvest maturity standards, will be achieved for the new ANABP01 apple in market. The development of maturity standards for three apple varieties will benefit industry and ensure a legislated approach to allow the industry to deliver a consistent supply of high quality product to consumers.



Additional flow on benefits will include improved apple eating quality, increased demand for apples and improved producer and supply chain profitability.

The project test properties cover three different growing regions including the Perth Hills (two properties) — Donnybrook (one property), Kirup (three properties) and Manjimup (two properties). The three test program includes; one test pre-harvest (two weeks pre-maturity), one test at harvest (maturity) and one test postharvest (two weeks post maturity). At each orchard, sampling consists of 24 pieces of fruit collected for testing from two production areas. Twelve trees on each property are selected and marked prior to collection. All test apple samples once collected are kept at a constant cold storage temperature prior to testing.

The apples have been tested using approved techniques for assessment of maturity standards by Apple and Pear Australia Ltd (APAL) as well as the methodology used for the current Pomewest project to test the maturity standards for identified WA apple varieties.

Near Infra-Red Difference of Absorbance (DA) meter readings have been used

TEST apples on the tree prior to collection.

to measure chlorophyll content; fruit pressure (kg) has been measured by using a FT 327 Penetrometer (11mm tip); and total soluble solids (°Brix) have been measured using a high precision digital sucrose refractometer with automatic temperature compensation.

Fruits are scored on a Starch Index test (SI) Department of Agriculture and Food Western Australia (DAFWA) and fruit acidity (Malic acid) is measured using a Hanna Instruments mini titrator for fruit juice analysis. The test apples are stored at a temperature of 3°C and all tests are done at 20–22°C.

Data with diagnostic information is supplied to participating growers to assist management and project metadata is analysed and discussed at the end of each season in a report and presentation to industry. Photographs of the test apples have been taken including the external appearance and of the Starch Index test.

MORE INFORMATION ►

For further information please contact Nardia Stacy at Pomewest on (08) 9368 3869, mobile 0411 138 103 or email nardia@fruitwest.org.au

Future Orchards Walk to boost harvest productivity



FUTURE Orchards Craig Hornblow giving tips for young trees.

BY NARDIA STACY AND SUSIE MURPHY WHITE
POMEWEST

The first Future Orchards® Orchard Walk for 2016 was held at Karragullen and it was well attended by orchardists from the Perth Hills and South West.



Future Orchards® is a national program funded by Horticulture Innovation Australia Ltd (HIA) and managed by Apple and Pear Australia Ltd (APAL).

The purpose of the orchard walk at Karragullen was to share tree crop and physiology research results from the Productivity, Irrigation, Pests and Soils (PIPS) project. Guest speaker Nigel Swarts from the Tasmanian Institute of Agriculture spoke about nitrogen uptake and the distribution of nitrogen within the tree.

He said “Pre-harvest nitrogen supply should occur no earlier than four weeks after full bloom and uptake efficiency will be optimized through providing weekly applications”.

“The distribution of nitrogen within the tree was strongly influenced by timing of the nitrogen application. A greater proportion of nitrogen was directed to the canopy from the pre-harvest nitrogen application whereas post-harvest nitrogen was directed to storage”.


Craig Hornblow from AgFirst NZ spoke about orchard sustainability at harvest time. Combining the focus on market acceptable yields, productivity influencing costs and the people required to make it all happen.

Based on the outcomes of the program’s research from 2012 to 2014, Craig Hornblow from AgFirst NZ advised that it’s achievable to produce 100t/ha of high quality fruit in WA.

Craig said “the consistency over the entire row length and across blocks was vital to achieving higher yields, and suggested the canopy should be full of low vigor, calm fruiting units, each in their own space.”

The management of people was discussed with the key message to manage harvest labour availability, job satisfaction and compliance. “Good pickers need to be well looked after.”

Future Orchards® provides apple and pear growers Australia-wide with practical, hands-on education and tools to help increase quality and productivity in their orchards and assist the industry in becoming internationally competitive.

Karragullen Cool Store hosted presentations, which were followed by an orchard walk at Steven Ghilarducci’s Strathspey Orchard in Karragullen. 

MORE INFORMATION ►

Orchard walk presentations are available on the APAL website at apal.org.au. They can be searched by topic and/or date. Future Orchards® tools and education information can be accessed here <http://apal.org.au/research-development-extension/future-orchards/>

FUTURE Orchards new plantings at Strathspey Orchard, Karragullen.





BY KIM JAMES
ASHMERE CONSULTING

The Surveillance Trapping Network Project

The Australian pome fruit industry remains relatively free of the serious pests and diseases that threaten world pome fruit production.

Protection of existing markets and farm assets is important, and increasingly there is a need to implement surveillance programs, to control, and to have 'evidence of absence' for pests of quarantine concern. Mediterranean fruit fly (Medfly) is Western Australia's biggest pest of quarantine concern. Since 1895 when it was introduced into Western Australia, Medfly has become established into key production areas, particularly in urban, peri-urban and rural areas where fruit is grown.

High quality pest surveillance data is of key importance for retaining market access, both interstate and with international trading partners. Surveillance for specific pests is often carried out by state or territory departments of primary industries or independent parties. However, industry-driven surveillance is becoming an important tool in proving regional, area, or state freedom from pests of quarantine concern. The extent of surveillance that is necessary is highly specific to each importing country or state. Export approval can often depend on the major primary industries in that country, the importing country's pest status and the level of assurance needed by that country to be confident about importing Australian produce.

Leading industry stakeholders are keen to protect existing markets and gain new export markets. To achieve this there is a need to demonstrate that orchard surveillance programs capture pest numbers throughout the season and they also have documented pre and postharvest control measures in place to prove Area of Low Pest Prevalence (ALPP) trading status.


A pro-active Medfly surveillance program is both a useful pest control tool and insurance policy to maintain and gain markets for the Western Australian pome fruit industry.

The project objective is to take the required steps to implement an industry owned surveillance trapping network for Medfly that will collect and collate data to support a future acceptable trade protocol such as an ALPP to meet trading partner requirements. With reduced Medfly numbers, and specific control and management practice in place, the data set over a few years will be able to table evidence of low prevalence for fruit fly to define a case for ALPP (based on International Standards for Phytosanitary Measures — ISPM's 14, 22 and 30).

The Surveillance Trapping Network Project is funded by Pomewest to develop a Surveillance Trapping Network (STN) to monitor Medfly in key growing areas within the South West pome fruit production area of Western Australia. The project commenced in 2015 with Medfly traps located in 12 grower orchards and six town properties in the South West. The first year of the project has targeted Donnybrook,

Kirup, Manjimup and Pemberton with deployment of 168 Medfly traps that are checked and serviced each two to four weeks based on sound knowledge of the pest's biology and ecology. The aim in the first year is to collect and collate Medfly baseline data from pome fruit properties in the area.

The project will determine Medfly numbers in key production areas and ensure continuation of surveillance and monitoring of the five year Medfly trapping program in the South West.

The Medfly surveillance trapping data collected will allow participating growers to define the extent of the problem and to allow development of appropriately targeted control and management measures to reduce fruit fly numbers. The STN traps and data collected is owned by Pomewest and will align with *Biosecurity and Agricultural Management (BAM) Act* of 2007. Data collected will be supplied to DAFWA on request if approved by the Pomewest Biosecurity Committee. Existing historical trap-catch data from the South West region will be used in the trapping data analysis and an initial proof of concept trial has been conducted in the first year on a fruit production property in Gingin to validate the efficiency of the Medfly lures used in the project. The lures in each trap are replaced each 12 weeks throughout the life of the project. 

MORE INFORMATION ►

For further information please contact Nardia Stacy at Pomewest on (08) 9368 3869, mobile 0411 138 103 or email nardia@fruitwest.org.au.

Being export ready for West Australian apples

BY ANN LYSTER

ORCHARDIST AND DIRECTOR OF THE
FRUIT WEST CO-OPERATIVE LTD



The West Australian apple industry has a long history of exporting, from the early days of Granny Smith exports to the United Kingdom and Asia, to the halcyon days of Pink Lady™.

Growers made very good money and many tonnes of Pink Lady™ otherwise destined for the local market were directed to the UK. Without these exports from WA Pink Lady™ would never have been established as a premium apple in the world fruit trade. These exported apples took price pressure off the supply chain in our domestic market helping growers attain better prices at local level.

Sadly, over the last number of years the export market has dried to a trickle for a number of reasons. The high AU dollar, quality/ MRL issues and not least the Global Financial Crisis have seen confidence challenged worldwide. Competition from low cost producers, such as South Africa, has also certainly impacted.

GERALDINE Darbyshire from B & G Darbyshire Orchards, **Katie Kammann** from Newton Orchards and **Ann Lyster** from Lyster Orchards.

With the dollar closer to 70 cents, a rapid uptake of Quality Systems and the UK and Asia actively engaging with exporters in Australia we see a more positive situation. Since the inception of more controlled marketing of trademarked varieties and with the emergence of a new and exciting dark skinned apple there is enormous potential to re-launch an export industry here in West Australia.

It is now time to examine what is needed to be export ready.

As growers there are things we can control and those that are beyond our scope. European markets are very mature and tuned in to consumer requirements, in particular food safety. Growers in West Australia are familiar with QA Systems, the food safety issues and associated record keeping. However these HACCP based systems whilst well accepted in Australia are not recognised in other jurisdictions.

Global G.A.P is the standard that is required by most markets in Europe and the UK. Whilst Asian markets are not as tough with QA systems this sector is increasingly moving in line with European standards and Global G.A.P seems to be the system of choice.


Of most importance for growers is to understand many supermarket chains have their own 'in house' standard for both growing and packing so it is wise to liaise with your Exporter to ascertain particular requirements. You may require both Global G.A.P and another certification. Examples are Tesco 'Nurture', Marks and Spencers 'Field to Fork' and packing houses need to achieve 'British Retail Consortium Standard'.

As varieties these days are all commercialised under Trademarks it is important to make sure that the exporter has the necessary licenses required to trade your fruit in the destination country.

Understanding the MRL and withholding periods is vital as there can be differences between what is acceptable in European Union the UK and Supermarket QA systems. Whilst this process can seem frustrating, if growers are aware of plant protection requirements right from bud burst, action plans can be followed.

Exporters should supply growers and packers with 'Minimum International Quality Specifications' which cover Brix, colour, firmness, major defects and minor defects. It is useful to be aware of these specs as 'out of spec fruit' causes problems for all involved. To avoid any quality/size problems growers must manage and select blocks specifically for export.



While the gaining of another certificate to validate good orchard practice is very rewarding, the real reward needs to be the financial return at the end of the process. The companies all worked closely with Peter Richardson of Matrix and are pleased to report that the prices achieved in the UK were the best returns for Pink Lady™ in the 2015 fruit season. 

MORE INFORMATION ►

If you would like more information contact Nardia Stacy, Pomewest on (08) 9368 3869 or email nardia@fruitwest.org.au

After the decisions have been made regarding markets and requirement it is up to growers to seek out and engage an auditing company well in advance of export date. As this process can on occasions be very protracted, the audit needs to be carried out well in advance of picking and packing.

Each QA system comes with lists of compliance criteria which growers need to acquaint themselves with, carrying out internal audits well in advance of third party audit so remedial actions can be taken.

While the process of review takes time and on occasions some of the compliance criteria may seem frustrating, it can be viewed as an annual 'health check' of your growing practice just as with financial reviews carried out by banks and accountants.

2015 saw three companies export Pink Lady™ apples to Tesco in the UK. These companies were the first to apply for and receive the Tesco 'Nurture' certification. Tesco have a grading system of bronze, silver and gold. Newton Brothers, Darbyshire Orchard and Lyster Orchards were all proud to have attained Silver status.



POMEWEST Chair Harvey Giblett showcasing Pink Lady™ crops.



Black or white netting?

Is there a difference? Or just a preference...

BY SUSIE MURPHY WHITE¹,
 ROHAN PRINCE² AND LISA STARKIE²
¹ POMEWEST
² DEPARTMENT OF AGRICULTURE AND
 FOOD, WA

What is the difference between black and white net? Is there a difference or is it just your preference?

A netting demonstration site at Lyster's Orchard, Manjimup, Western Australia was set up to demonstrate the benefits of netting under Western Australian conditions. Two sections of 16mm cross over quad netting were installed over an established Cripps Pink and Fuji orchard to assess their effect on protection from birds, sun and hail damage.

The demonstration established in November 2013 compared black net and white net to an area of non-netted (no net) trees within the same block in the orchard.

Specifications on the black net state a 23% reduction of both shade and UV radiation while white net stated a 20% reduction.

To test the effect of the netting, sensors were installed in each section to continuously measure mid canopy air temperature, solar radiation, relative humidity and fruit surface temperature. A hand held meter was also used to measure photosynthetically active radiation during the season.

Winter chill accumulation and fruit quality were also measured together with observations of flowering to determine the dates of bud break, occurrence of first flower and full bloom.

Winter chill

Winter chill was calculated from 1st March through until 31st August 2014 and 2015 from hourly temperature readings (see Figure 1). There is no difference in chill accumulation under black net, white net or no net area. The nets do not reduce the amount of chill accumulated as there

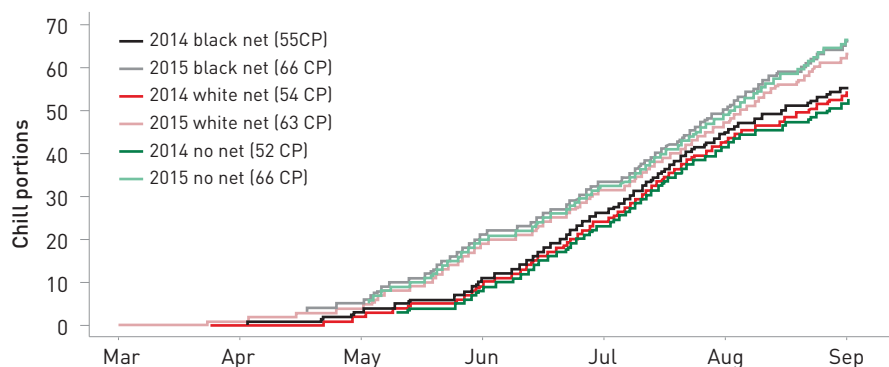


FIGURE 1 Chill accumulation under the black net, white net and no net in 2014 and 2015
 Source: DAFWA

is minimal impact on the temperatures recorded under the black or white net or no net.

Flowering

Bud break and flowering data was collected from 10 trees under black, white and no net rows. Observations were made three times a week from 30 August 2014 to 30 October 2014 (see Figure 2). Whole tree assessments were made to determine the dates of bud break, occurrence of first flower and full bloom and to monitor progression of flowering. There is minimal difference in flowering progression between the netted trees to the no net trees. All trees still came into full bloom at the same time in 2014.

Fruit growth rate

Fruit diameter was measured six weeks after full bloom until the first pick. Little difference was measured in all sections during the majority of the season. In March, apples under the black net measured 3mm larger on average than fruit under white net or no net. However, at harvest time there was no significant difference in diameter of fruit grown under any of the treatments.

Minor variability in irrigation, tree management and nutrition are likely to have greater impact on fruit size than netting.

Mid canopy air temperature

There was minimal difference between the black and white net for mid canopy air temperature and humidity. Mean daily temperatures rarely varied more than 0.5 to 1 degree. The netting led to small increases in minimum temperatures and dampening of maximum temperatures. This action is similar to a cloud cover effect which reduces radiant heat loss overnight and reflects a portion of incoming daytime radiation reducing maximum temperatures.

Solar radiation and fruit surface temperature

Not surprisingly the no net area received the highest solar radiation (see Figure 3). While not exactly the same as the specifications, the white net showed a 15% reduction and the black net 26% reduction during January and February 2015 and 2014. Specifications are only given as a guide to how the nets will perform and in this case the black net was close to specification and the white net slightly less.

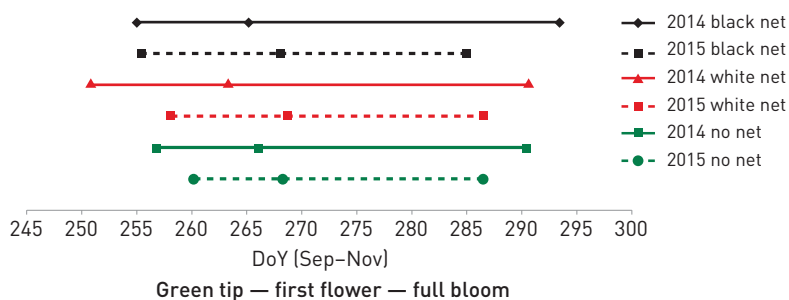


FIGURE 2 Flowering progression of Cripps Pink apple trees under black, white and no net

Source: DAFWA



THERMOCOUPLES inserted into Cripps Pink apples to measure the fruit surface temperature.

It is reasonable to think that amount of solar radiation reaching the fruit surface should influence the fruit surface temperature (FST). FST was measured over the summer 2013–14 season (see Figure 4).

Surprisingly, average FST was lower under the white net than the black, even though greater solar radiation was recorded under white net.

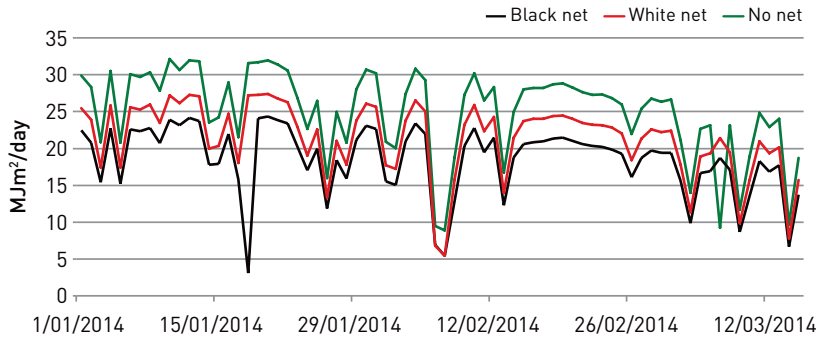


FIGURE 3 Solar radiation measured in the black net, white net and no net rows for summer 2014

Source: DAFWA

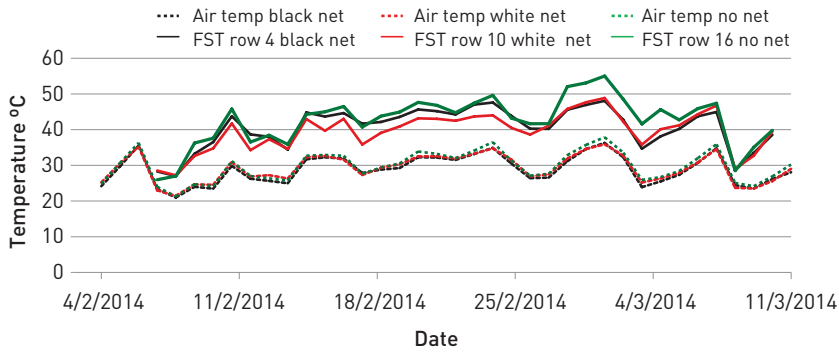


FIGURE 4 Fruit surface temperature (FST) and air temperature measured in the black net, white net and no net rows for February till mid-March 2014

Source: DAFWA

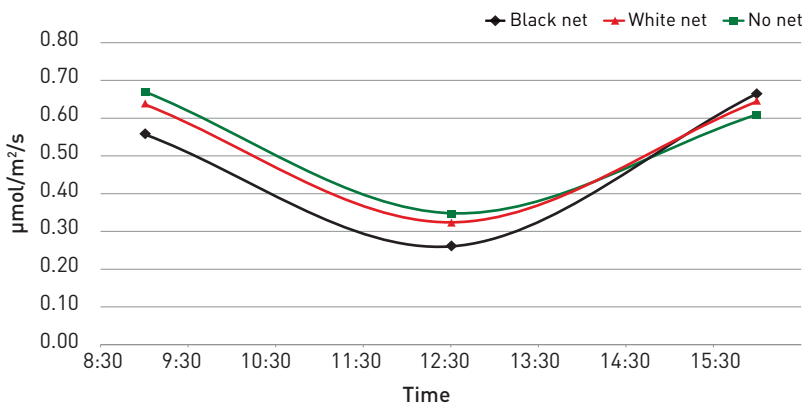


FIGURE 5 Average fractional photosynthetic radiation interception (fPAR) measured at morning, noon and afternoon on 23 February 2015 in the black net, white net and no net rows

Source: DAFWA

FST was significantly higher in the no net area particularly during extreme heat events in late summer and a higher percentage of sunburnt fruit was observed. There was no difference in sunburn between the black and white net areas, and both netted areas reduced sunburn significantly compared to the no net area.

Photosynthetically active radiation (PAR)

The effective area of shade was calculated by measuring PAR on a clear sky day in February 2014 and 2015 using a hand held ceptometer. Several measurements were taken throughout each section at morning, solar noon and afternoon to measure the extent and density of the shade created by the tree.

While measurements reflected shade specification of the net, the reduction in PAR was also influenced by tree vigour. Figure 5 shows the black net had a greater reduction in shade compared with the white net and no net. Tree vigour was higher under the netted areas than outside the net.

During the monitoring of the demonstration site low bird pressure years were experienced with no damage occurring outside or under the nets.

Netting has the capability of reducing bird damage and sunburn damage compared to the no net treatment. No major hail event was experienced, but anecdotally netting reduces damage caused by hail as seen in previous studies in Queensland. The netting had no impact on the fruit growth rate, and flowering was not affected and no significant differences were seen in winter chill between the no net, black net and white net. The impact of the reduced PAR under the nets and the increased vigour could explain the poor colour development of the fruit.

MORE INFORMATION ►

Contact Susie Murphy White Pomewest Project Manager, Susan.Murphy-White@agric.wa.gov.au